



Albuquerque Bernalillo County
Water Utility Authority

Water Resources Management Strategy

October 2007



Albuquerque Bernalillo County Water Utility Authority Board

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Appendix A – 2007 Water Resources Town Hall Report

Overview

A. Introduction

This document sets forth the Albuquerque Bernalillo County Water Utility Authority's (Authority) Water Resources Management Strategy (Strategy) – a long-range water supply plan for the metropolitan area. The purpose of the Strategy is to provide a safe and sustainable water supply for the metropolitan area by: (1) determining and utilizing the existing water resources owned by the Authority and (2) planning and making the best choices for future supplies and management. The Strategy is designed to ensure Authority customers a safe and sustainable water supply at least to 2060.

The Albuquerque/Bernalillo County Comprehensive Plan sets out goals and policies for land use, environmental, and resource management decisions. It requires that “the water resources of the metropolitan area shall be managed to ensure permanent adequate supply” and to “maintain a dependable, quality supply of water for the urbanized area’s needs.” While the Authority does not have platting and planning jurisdiction, land use decisions and water resources management are linked.

The Strategy provides for a continuation of the policies, projects and recommendations in the original Strategy adopted by the Albuquerque City Council in 1997 and then Authority in 2003. The Strategy provides policies and recommendations for continuation of the need to shift from sole reliance on the aquifer to renewable supplies including the San Juan-Chama Drinking Water Project.

B. Policies

The Strategy consists of thirteen policies and more than sixty recommendations for providing a safe and sustainable supply. The Strategy is a continuation of existing policies in the original document, but also includes new policies and recommendations for the Authority to continue to be a leader in water resources management in the Southwest. The Strategy represents a continuation of a major water policy change from those that guided the utility's activities since the 1950's. The policies and recommendations are listed below in no particular order or priority.

- Update and Maintain a Water Budget
- Balance Demand with Renewable Supply by Using San Juan-Chama Water as the Primary Source of Supply
- Establish and Maintain a Ground-Water Drought Reserve
- Update and Implement the Water Conservation Strategy
- Support Regional Water Resources Planning and Management
- Pursue the Conjunctive Management of Available Water Resources
- Develop and Implement Long-Term Water Acquisition Plan
- Implement the Water Quality Protection Plans and Policies
- Equitably Incorporate the Costs of Providing a Safe and Sustainable Water Supply into Water Rates

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- Protect Valued Environmental and Cultural Resources of the Region
- Preserve and Enhance the Quality of Life in the Region
- Link Land Use Planning with Water Management
- Encourage and Facilitate Public Involvement and Support

C. Projects

The Strategy incorporates the projects identified to be implemented in the original strategy including the San Juan-Chama Drinking Water Project, North I-25 Non-potable Surface and Industrial Reuse Project, Southside Municipal Effluent Polishing and Reuse project and demonstration project for aquifer storage and recovery. In addition, the Strategy includes the following conceptual projects:

- Implement an full-scale Aquifer Storage and Recovery program beginning with the necessary pilot studies needed to supplement the current activities, permitting phase such that the project can be implemented with the San Juan-Chama Drinking Water Project is operational.
- Over time, build and operate additional water reuse and recycling projects to provide irrigation and industrial water to larger areas in the southeast and westside of metropolitan Albuquerque.
- Investigate the feasibility of desalination as a future water source considering financial, energy and environmental factors.
- Evaluate and examine the use of the very deep aquifer (greater than 3,000 feet below ground surface)

In addition to the development and implementation of these identified project concepts into potential construction of water supply and reclamation projects, several activities must be undertaken, including:

- Develop a program to determine the safe yield of the regional ground water supplies when the San Juan-Chama Drinking Water Project is operational.
- Complete the necessary hydrologic studies to update the analysis in the Value of Water Study to determine the appropriate timeframe for the drought reserve
- Continue study of the Middle Rio Grande hydrogeology to foster better understanding among all of the regional entities about the consequences of continued sole reliance on the aquifer
- Protect and enhance storage opportunities at Abiquiu reservoir and the need for additional short and long-term storage
- Continue and expand public education and involvement to promote water conservation, aquifer protection, sensible water practices and policies.

D. Public Involvement

In 2003, when the Authority adopted the 1997 Strategy as the water supply plan for the Authority, it also established a Water Resources Advisory Committee (WRAC) to explore all issues and matters germane to water resources planning and management

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in a two year period. The WRAC examined the current Strategy and provided recommendations to the policies. In 2006, the Authority established the Customer Advisory Committee (CAC) whose purpose was to provide input on policies, plans and programs. One of CAC's primary objectives was to update the policies of the Strategy. The CAC reviewed the WRAC's recommendations and worked on revising the policies of the current Strategy. The CAC completed its work in August 2007 and the revised policies reviewed by the public as a whole in a Town Hall in September 2007.

The purpose of the Town Hall was to obtain community input on the revised policies to ensure a safe and sustainable supply of water into the future. The Authority seeks to reach its water resources management decisions through a public process so that they reflect community values. The Town Hall brought significant input about community values, priorities and objectives and how they can be reflected in water resources activities. The Town Hall participants were balanced among many different members of the greater Albuquerque metropolitan community. Participants included elected officials, government agencies, neighborhood associations, development groups, environmental organizations, businesses, educational institutions, consultants, engineering firms, and ordinary citizens. After the presentations, small groups of approximately fifteen participants each discussed the policies in six facilitated break-out sessions. The participants were asked to rank the policies and recommendations in order of importance. The policies discussed at the Town Hall included the water budget, conservation, water supply, water rates, and linking water land use planning to water management.

The Town Hall participants felt that the most important steps for the Authority to take include: education, sufficient water supply, regional approach to water management, conservation, and coordination of growth management. Overall, the majority of the participants felt that almost all of the policies were "very important" or "somewhat important." The top five policies that the participants ranked the highest included:

- Continue public education
- Low water use landscaping new construction
- Conservation penalties, incentives
- Mandatory drought management
- Protect areas of natural infiltration and recharge

The Authority will continue the public involvement program developed for the water resources management planning process. It will also continue to seek the advice and counsel of the CAC and to engage the public and elected officials in the region in the ongoing planning and decision-making process.

Policies

A. Update and Maintain a Water Budget

POLICY A: The water budget shall be the reporting, planning and management basis for water resources management for the Authority. The water budget shall be updated annually and reviewed no less than every five years.

RATIONALE: The water budget should be considered a dynamic element to be updated and reevaluated periodically because natural processes and their effects are not always predictable.

This policy involves three elements, outlined below.

1. Interactive Model of the Water Budget

POLICY A.1: The Authority shall acquire or develop a flexible interactive model of the water budget that can evaluate simultaneous multiple scenarios including alternative hydrologic and climatic conditions and forecasts, water supply and demand. The interactive model should be developed using the best available science and should be updated as relevant scientific information is available.

2. Annual Review of the Water Budget

POLICY A.2: The water budget and the scientific scenarios analyzed shall be compiled into a report and presented to the Authority on an annual basis. The Authority shall review the water budget and consider policies consistent with its five-year goals and one-year objectives for the water resources management program.

3. Consistency with the Regional Water Budget

POLICY A.3: To the extent possible, all future water budgets and alternatives shall be developed within the framework of the regional water budget accepted by the Authority.

B. Balance Demand with Renewable Supply by Using San Juan-Chama Water as the Primary Source of Supply

POLICY B: The Authority shall protect its right to fully use its San Juan-Chama and Rio Grande surface water as a direct water supply and transition to other renewable supplies when available and appropriate. The Authority shall limit the use of ground water except to meet peak demands or during times of drought.

RATIONALE: A safe and sustainable water supply is needed to maintain the dependable quality supplies called for in the Albuquerque Bernalillo County Comprehensive Plan. A safe and sustainable supply is also of paramount importance if the Comprehensive Plan's other goals related to land use, environmental protection and heritage conservation, and community resource management are to be achieved. Use of renewable surface water will also protect the aquifer and the community from the effects of overpumping ground water and will provide a water supply system that is renewable in perpetuity.

Recommendations:

1. The Authority should develop a program to determine the safe yield of the regional ground water supplies when the San Juan-Chama Drinking Water Project is operational. The program should be completed working in collaboration with research institutions.
2. The Authority should utilize a combination of renewable supplies including the deep aquifer, surface water, industrial and municipal effluent, impaired groundwater and recycled water.
3. The Authority should match the various sources of supply with the needs of different users while considering the end use and water quality.
4. The Authority should recycle and reuse as much water as possible while considering the use of storm water for irrigation and aquifer recharge.
5. The Authority should take all the necessary steps to protect their water rights.

C. Establish and Maintain a Ground-Water Drought Reserve

POLICY C: The Authority shall establish a ground-water drought reserve that maintains sufficient water in storage in the aquifer to provide water supply during a prolonged drought. Water levels in the aquifer shall be maintained so that a drought reserve shall be accessible without causing adverse, irreversible impacts to the aquifer.

RATIONALE: A portion of the high-quality, easily accessible ground water stored in the aquifer needs to be preserved to allow for its use during future drought conditions. This would enable the Authority to provide an uninterrupted supply while avoiding depletion of Rio Grande flows when surface water flows are below acceptable flow levels due to drought. Ground water used as a drought supply has very high economic and quality-of-life value. Previous studies of the frequency and severity of droughts in the southwest suggest that a drought reserve is prudent.

Recommendations:

1. The Authority should proceed to implement an aquifer storage and recovery (ASR) program beginning with the necessary pilot studies and permitting phase such that the program can be implemented when the San Juan-Chama Drinking Water Project is operational.
2. The Authority should identify areas of natural recharge and protect lands which are recharge windows and corridors.
3. Water levels in the aquifer should be reported to the Authority Board on an annual basis once the Drinking Water Project is operational.
4. The Authority should complete the necessary hydrologic studies to update the analysis in the Value of Water Study to determine the appropriate timeframe for the drought reserve taking into account potential hydrologic and climatic changes.

D. Update and Implement the Water Conservation Strategy

POLICY D: The Authority will take the necessary steps to fully achieve its adopted water conservation goal to reduce per capita use 40 percent by 2014 compared to the base period average of 250 gallons per person per day. In addition to the ongoing programs providing significant resources to reduce water use, the Authority's water resources and conservation programs will address State evaluation criteria by: (1) providing public education regarding the need and methods for conserving, (2) metering of all Authority water uses, (3) accounting for different types of uses (residential, commercial, etc.) and comparison of amounts of use to western norms, and (4) utilizing drought contingency plans.

RATIONALE: As a scarce commodity, water should be conserved. Water conservation is required by the Authority's adopted water conservation strategy (Bill No. R-04-12). Water conservation progress has been excellent, but full implementation is necessary. Successful implementation of the conservation program is a foundation for this Water Resources Management Strategy. In addition to representing wise management and stewardship of the water resources, successful implementation of an effective conservation program is by State law a regulatory prerequisite for obtaining the future permits the Authority will require.

REPORTING: Water Conservation savings are evaluated and reported on a calendar year basis. The water conservation program reports annual conservation reductions as compared to the baseline figures from 1987 to 1994 including per account reductions for each customer class (residential, industrial, multi-family, commercial and institutional). In addition, the Authority compares peak usage as compared to the baseline. The per account methodology is the preferred method for comparison as opposed to per capita figures although per capita figures are also computed and reported.

Recommendations:

1. The water conservation goal should be reviewed every five years along with all new water conservation programs to determine if progress is being made on implementing new programs and reducing water consumption.
2. The Authority should encourage water conservation through economic credits or incentives.

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3. The Authority's water resources and conservation programs should continue to provide education, metering, accounting for the various water uses and customer classes, and drought contingency plans.
4. The Authority should adopt and implement drought management measures as necessary to reduce demand during droughts.
5. The Authority should utilize the per account methodology for reporting overall water use reductions in addition to reductions by customer class.

E. Support Regional Water Resources Planning and Management

POLICY E: The Authority shall pursue efforts to enhance regional water resources planning and management activities within the Middle Rio Grande Valley. The Authority shall work cooperatively with its neighbors—the Pueblos, the Middle Rio Grande Conservancy District, Middle Rio Grande Valley cities and counties, and involved state and federal agencies. The Authority shall become proactively involved in and monitor the progress of regional and interstate water management initiatives that may affect the Authority and the region.

RATIONALE: The Authority recognizes the need to work in cooperation with other entities that share use of the Middle Rio Grande Valley's water resources. The regional planning process must be extended to include other water use in the region. Regional water resources planning needs to address uses for public and domestic water supply, irrigated agriculture, livestock, commercial, industrial, fish, wildlife and recreation. The Authority, neighboring jurisdictions, and other water users need to work with State, regional, and federal agencies with water management responsibilities.

This policy involves four elements, outlined below.

1. Continue and Expand Technical Investigations in the Middle Rio Grande Valley

POLICY E.1: The Authority shall continue its proactive role to ensure that the necessary technical investigations are completed efficiently and expeditiously and that they result in the use of an improved quantitative model for water rights administration in the Middle Rio Grande.

RATIONALE: The investigations necessary to improve the quantification of the water resources of the region including the Authority's cooperative program with the United States Geological Survey and others should continue to further understand and present the best available scientific information available.

2. Seek to Implement the Middle Rio Grande Regional Water Plan

POLICY E.2: The Authority is committed to seek common solutions within a regional context. The Authority shall work cooperatively with

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others in the Middle Rio Grande Valley to implement the accepted Regional Water Plan.

RATIONALE: The Authority recognizes that its planning cannot occur in isolation. In addition to implementation of the necessary technical investigations described above, regional issues that need to be pursued include: water conservation, reclamation, and reuse; an inclusive public process to determine acceptable tradeoffs among urban, agricultural, and riparian water needs; equitable sharing of costs and benefits; appropriate use and regulation of domestic wells; preservation and enhancement of aquifer recharge through land-use planning; maintenance and enhancement of the existing irrigation canal and drain system; and management of flood waters and development of aquifer storage and recovery capabilities.

3. Work in partnership with Federal and State Agencies in coordinating and promoting sound water management in the Middle Rio Grande.

POLICY E.3: The Authority shall work with federal agencies including the Bureau of Reclamation, Corps of Engineer's and Bureau of Land Management, the State Engineer and the Interstate Stream Commission to find common solutions for water management on the Rio Chama and the Rio Grande.

RATIONALE: The Authority recognizes that partnering and cooperating with the State and Federal agencies provides unique opportunities to solve complex and difficult problems.

4. Work cooperatively with federal, state and local entities to quantify water rights in the Middle Rio Grande.

POLICY E.4: The Authority shall prepare for a basin adjudication in the Middle Rio Grande. In addition, the Authority shall seek alternative legal strategies (negotiated settlements) in addition to the traditional adjudication process.

RATIONALE: The Authority supports quantifying water rights in the Middle Rio Grande and should work cooperatively with federal, state and local entities in developing alternative strategies to adjudication.

F. Pursue the Conjunctive Management of Available Water Resources

Policy F. The Authority will enhance the sustainability of the water supply by effectively combining the use of surface water, reclaimed water, and shallow and deep potable and brackish ground water.

RATIONALE: Enhancing the efficiency of the Authority's water use, as called for in the Albuquerque Bernalillo County Comprehensive Plan, requires conjunctive management and use of all available resources: surface water for municipal and industrial supply and for irrigation, as well as use of lower-quality shallow ground water for irrigation and nonpotable use. Reclamation and reuse of existing water supplies, where economically feasible and protective of human health and the environment, represent viable methods of increasing the usefulness of a limited water supply.

This policy involves the following three elements.

- Use reclaimed wastewater, surface water, and shallow ground water for irrigation and nonpotable uses.
- Favor reclaimed water use.
- Determine and use a combination of surface water and deep aquifer ground water for municipal and industrial supply.

1. Use Reclaimed Wastewater, Surface Water and Shallow Ground Water for Irrigation and Nonpotable Uses

POLICY F.1: To the extent practicable, eliminate the use of high-quality water from the deep aquifer for irrigation of parks, golf courses, and other large turf applications. Use reclaimed wastewater, surface water, and shallow ground water for irrigation and nonpotable uses. Use of shallow ground water will be augmented with enhanced recharge as necessary to protect shallow ground-water levels.

RATIONALE: The water quality of reclaimed wastewater, surface water, and portions of the shallow ground-water system, though generally not adequate for use as a drinking water supply (without additional treatment), is well suited for irrigation and certain industrial uses. Shallow ground-water use must be augmented with enhanced recharge to avoid harmful water-level declines.

2. Favor Reclaimed Water Use

POLICY F.2: The Authority will favor the use of reclaimed water where economically feasible and protective of human health and the environment. The Authority will take action to ensure the appropriate use of nonpotable supplies to meet nonpotable needs. This may include providing economic incentives as necessary to encourage the use of reclaimed water.

RATIONALE: Reclaimed water from industrial and municipal effluent sources can be an economically feasible alternative to the use of deep aquifer pumping to meet industrial and irrigation demands, which do not require drinking water quality sources. However, sufficient treatment must be provided to protect public health and the environment. Consideration must also be given to satisfying the return flow needs of the Rio Grande from water-rights-permitting, Rio Grande Compact Compliance and environmental standpoints.

3. Use Surface Water and Deep Aquifer Ground Water Conjunctively for Municipal and Industrial Supply

POLICY F.3: Use pumping from the deep aquifer to meet seasonal peak demands and as a drought reserve. Provide for methods to store available surface water in the aquifer and to recover it from storage.

RATIONALE: The use of ground water will always be a key component of the Authority's supply system. Using the Authority's surface water for municipal and industrial supply will protect the aquifer so that it is available to meet seasonal peak demands and as a drought reserve. Without a ground-water component of supply, the Authority would need extremely expensive surface water storage facilities and larger and more costly treatment facilities to meet seasonal peak demands.

Successful establishment of a drought reserve requires that water withdrawn from the aquifer during times of drought be replenished during times of above average water availability. In Albuquerque, this requires artificial recharge of the aquifer with deep recharge wells. It is essential that this capability be developed and demonstrated.

G. Develop and Implement Long-Term Water Acquisition Plan

POLICY G: The Authority will pursue a portfolio of potential additional sources of supply. This may entail legal and institutional changes to provide for short-term leases and long-term acquisition of rights and supplies. Full consideration will be given to the financial considerations in addition to the regional context and consideration of agricultural and environmental issues.

RATIONALE: The Albuquerque Bernalillo County Comprehensive Plan calls for new water rights to be acquired if necessary to accommodate increasing needs. The legal and physical availability of water supplies, however, depends on a number of extremely complex and difficult issues that need to be resolved. Resolution of these issues will need to involve others within the region.

Recommendations:

1. The Authority should seek legislation to allow for water leasing and banking on a local, regional and interstate basis.
2. The Authority should continue to acquire water rights in the Middle Rio Grande on a voluntary basis. As a condition of sale, the Authority should seek to prohibit additional water uses on the property. When considering acquisition, the Authority should strive to balance agricultural and environmental values in the transfer to and from areas.
3. The Authority should investigate and enter into agreements for short-term leases in times when wet water is available to offset the needs for purchasing and acquiring water rights during times of drought and for aquifer recharge.
4. The Authority should stay active in evaluating other rights transfer in the Middle Rio Grande and should take proactive stances when necessary.
5. The Authority should protect and enhance its storage rights in Abiquiu and should pursue and file the necessary applications to appropriate flood flows including spills at Elephant Butte or other surface flows that may be available for storage in Abiquiu.
6. The Authority should investigate the potential of desalination as a future water supply considering financial, energy and environmental factors.
7. The Authority should develop a program to examine the feasibility and impacts of very deep aquifer (greater than 3,000 feet below ground surface) pumping.
8. The Authority should examine the need for additional short and long-term storage.

H. Implement the Water Quality Protection Plans and Policies

POLICY H: The Authority will take steps to fully implement the Ground-Water Protection Policy and Action Plan. Prevention of future contamination, protection of aquifer recharge areas, and the remediation of existing ground-water contamination will be areas of special emphasis and high priority. In addition to the ground-water protection efforts, the Authority will implement its Source Water Assessment and Protection Program, a watershed-based approach to protecting surface water.

RATIONALE: The Albuquerque/Bernalillo County Ground-Water Protection Policy and Action Plan (County Resolution No. AR 121-93 and City Enactment No. 81-1994) is another cornerstone of this Water Resources Management Strategy. This program is well underway, but its continued implementation is vital to the success of the Water Resources Management Strategy. The ground-water system is essential for water supply and as a drought reserve. Its protection from contamination is of paramount importance. The results of recent technical investigations show that the extent of the productive aquifer is smaller than earlier studies suggested. Most recharge of the deep aquifer system occurs via the currently substantially contaminated shallow ground-water system in the Inner Valley. Contamination within recharge windows is being transported toward public water supply wells. These conditions must be addressed or the viability of the ground-water component of the supply is imperiled. In addition to the ground-water protection efforts, preserving surface water quality will become even more important to the Authority's customers when the San Juan-Chama Drinking Water Project is operational.

Recommendations:

1. The Authority should continue to provide high-quality drinking water and discharge treated effluent that meets or exceeds federal and state standards.
2. The Authority should be proactive in identifying potential water quality threats to surface and ground water resources and should implement programs to the extent possible to protect the water resources in the Middle Rio Grande.
3. The Authority should consider the occurrence, fate and potential treatment of emerging contaminants in current and future water supplies and should actively participate in research which will become more important as the availability of water resources becomes more constrained.

I. Equitably Incorporate the Costs of Providing a Safe and Sustainable Water Supply into Water Rates

POLICY I: The Authority shall ensure that an equitable water rate structure is implemented to provide a stable and predictable revenue stream sufficient to cover operating and capital replacement costs, as well as finance system expansion and acquisition of new water supplies. The Authority shall consider water conservation in the development and implementation of water rates and fees. Rate increases when necessary will be gradual to the extent possible. Provisions will be made to assure that low-income individuals continue to receive affordable basic water and wastewater services.

RATIONALE: Water rate structures play an essential role in communicating the value of water to water customers, thus promoting long-term efficient use. The value of water includes (1) the Authority's operation and maintenance costs; (2) capital costs and debt service to procure, preserve and develop additional supplies to meet growing demands; and (3) social and environmental "opportunity costs" of losing other benefits of the water and natural waterways. Future water rates and fees should be equitably shared and should be fair and recognize that high-volume uses are not necessarily bad or wasteful. For example, large families use more water than small ones, even though their per capita use may be the same.

Consideration should be given to the life-cycle costs of projects, the degree to which existing water resources are utilized and potential savings to customers that accompany wise resource management. Costs related to arsenic treatment or other required mandates, or the avoidance of drought effects and land surface subsidence will be much greater if this strategy is not implemented.

Recommendations:

1. The Authority should continue increasing water rates and implementing steeply increasing block rates to encourage water conservation, including a very low rate for low water use customers and increasing to very high rates for large water users. Surcharges for excess use could vary by customer class, targeting water classes that have not achieved water conservation goals.
2. The Authority should implement policy changes to increase the cost of service principals to include a scarcity value of water. Current legal restrictions place limits on how much revenue a utility can recover prevents rates high enough to induce water conservation. The Authority should investigate whether opportunity cost or scarcity value could be included in its cost calculations, allowing it to set rates high enough to cover these components of the total cost of delivered water.

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3. Water rates should include a “lifeline” feature so that low income and low usage households are not overly burdened.
4. The Authority should review the water bill periodically so that the actual water usage is the focus of the bill with a specific statement about the benefits of conserving water. The water bill should state the Authority’s water conservation goals.
5. The Authority should review and evaluate the water and sewer rate structure biannually and should continue the water rate stabilization fund to offset the need for rate increases when revenue fluctuates due to weather and other factors.
6. The Authority should continue to offer financial aid for costs associated with connecting water and sewer infrastructure to qualified low income customers. The Authority should consider establishing a revolving fund to assist these customers.

J. Protect Valued Environmental and Cultural Resources of the Region

POLICY J: The Authority shall identify and provide resources to preserve and protect valued environmental resources of the region. The Authority shall work independently and in partnerships to ensure that its activities do not irreparably harm the aquifer, river and Bosque and the cultural resources of the region.

RATIONALE: The regional aquifer, Bosque and the Rio Grande are exceptional resources of great value to both residents and wildlife that provide the region with an environment unique in the West. The Authority should adopt policies and work cooperatively to protect these environmental features. The Authority should acknowledge that New Mexico has historically been an agriculturally based society and our history and cultures were founded on it.

Recommendations:

1. The Authority should work with local, state and federal agencies to protect the areas of natural infiltration and recharge from development. These areas should be designated as open space for environmental, aesthetic, recharge potential and water quality.
2. The Authority should encourage the State to recognize instream flows as a beneficial use and should acknowledge and quantify the riparian use of water within the Authority's management area.
3. The Authority should consider the impacts on environmental and cultural resources and take appropriate steps to mitigate unavoidable effects considering the Rio Grande ecosystem in its entirety.
4. The Authority should encourage agricultural, historical, educational and cultural programs that aim to educate the public on the value of water conservation and best management practices for irrigation, environmental and cultural water-related resources.
5. The Authority should participate and support the Endangered Species Act Collaborative Program and other programs that promote habitat restoration and initiatives to recover endangered species in the Middle Rio Grande.
6. The Authority should implement the proposed mitigation programs for the Drinking Water Project including ongoing monitoring and reporting.

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7. The Authority should work cooperatively with federal, state and local entities to promote environmental and recreational opportunities on the Rio Chama and the Rio Grande.
8. The Authority should work with the City and County in acquiring and retaining river related open space in the region and assist with programs to enhance aquifer recharge and protect wildlife habitat.

K. Preserve and Enhance the Quality of Life in the Region

POLICY K: The Authority seeks a Water Resources Management Strategy that will preserve and enhance the quality of life within the region. The implementation of the Authority's water resources programs and projects shall include support of infrastructure needs (basic water and wastewater services) and public amenities (parks, green belts, etc.). In addition, the benefits and costs of implementation will be shared equitably—among current and future residents of the region.

RATIONALE: As the largest municipal and industrial provider in the state, the Authority recognizes its obligation to continue to strive to enhance the quality of life within the region. Factors influencing quality of life include support of desired socioeconomic growth and development, support of public amenities, and lack of disruption of normal activities.

Recommendations:

1. The Authority should work with the City and County to ensure that current and future public spaces and recreation spaces are water efficient.
2. The Authority should adopt policies, where appropriate, to require water conservation in public spaces. Existing public spaces should be retrofitted for water conservation.
3. The Authority should work with the City and County to provide incentives to employers through the use of industrial revenue bonds, planning activities, and support of recruitment and training services as a technique for achieving new employment opportunities in accordance with adopted policies including the Planned Growth Strategy.

L. Link Land Use Planning with Water Management

Policy L. The Authority shall coordinate and cooperate with the City, County and all other entities with planning authority to integrate water management policies with land use decisions. The Authority recognizes that additional water resources shall be acquired to serve future customers in accordance with the approved water budget.

Rationale: While the membership of the Authority consists of elected officials from the City, County and Village of Los Ranchos, the Authority has no decision making power for land use decisions. Future development in the region requires coordination to integrate land use, transportation, economic development and other planning efforts with water resources management.

Recommendations:

1. The Authority should continue the current no-net-expense policy. Developments outside of the service area should provide water rights or funding for the purchase of new water rights as a condition or service in accordance with the no-net-expense policy.
2. The Authority should work with the City and County to update the Albuquerque/Bernalillo County Comprehensive Plan and/or other plans to encourage full build-out of available land in the service area and promote concurrency between development and infrastructure service levels.
3. The Authority should ensure that its capital planning process is based on the City and County growth and development master plans so that land use and infrastructure policies are consistent.
4. The Authority should support the increase of urban building densities and infill development consistent with adopted land use plans as higher density development can reduce outdoor water usage and other environmental benefits.
5. The Authority should encourage the City, County and State to adopt Building Code and low water use landscaping standards for all new construction.
6. The Authority should encourage conservation oriented economic development that focuses on minimized water usage.
7. The Authority should request that member governments take water supply availability and cumulative impacts into account when making land use development decisions and that member governments adopt policies integrating

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land use, transportation, economic development and other planning efforts with water resource management.

8. The Authority should continue its review process so that each new industrial, commercial, residential and municipal development is reviewed to ensure ongoing availability of adequate water supplies.

M. Encourage and Facilitate Public Involvement and Support

POLICY M: The Authority should continue and expand education to keep the public informed about the choices and tradeoffs involved in making water management decisions and will invite public comment and participation in implementation of these policies.

RATIONALE: An informed public contributes to the successful implementation of water resources management solutions. It is the public that defines the values of the region, upon which the policies are based.

Recommendations:

1. The Authority should develop and maintain a water education curriculum for schools to teach children the importance, value and appropriate use of water in the region.
2. The Authority should develop an adult education program to encourage a more complete awareness of the full range of water related subjects and to encourage voluntary water conservation programs.
3. The Authority should consider preparing public service announcements on all aspects of water resources management and should continue the public marketing campaigns.
4. The Authority should continue to partner with real estate, design, building and construction industry groups to educate their membership concerning water conservation means and methods.
5. The Authority should consider interactive tools to engage the public on efficient water resources management such as self assessment water calculator, a water audit tool for the website, or a computerized version of the water budget that details water levels in the aquifer, enabling users to individually participate in water management scenarios.

Strategy for Use of Existing Supplies

This section describes the Authority's strategy for using the existing supplies to provide a safe and sustainable water supply.

A. Use of Ground Water

The aquifer will no longer be the primary source of supply except during droughts and peak times during the summer. The use of the aquifer will be limited to provide the opportunity for natural and manmade recharge to create and maintain a ground water drought reserve. As population increases over time, ground water use will increase, but the Authority's policies are to find and utilize additional renewable supplies such that ground water use is limited to the amount of recharge. In the next couple of decades following implementation of the San Juan-Chama Drinking Water Project, ground water use will be substantially less (except during droughts) thereby allowing natural recharge in combination with the Authority's aquifer storage and recovery projects.

B. San Juan-Chama Drinking Water Project (DWP)

One of the primary components of the original Strategy was the implementation of the San Juan-Chama Drinking Water Project. The project is under construction and will begin operations in 2008 with full operations in 2009. The primary purpose of the project is to transition from sole reliance on the aquifer to a renewable supply. San Juan-Chama water will be the primary source of supply for the Authority customers with ground water, reuse and recycling supplementing the surface water to meet demand. The OSE permit, however, provides that the Authority cannot divert during low flows periods commonly associated with droughts in the Middle Rio Grande. During those times, the Authority will shutdown the diversion and water treatment plant and rely solely on the aquifer. The San Juan-Chama water that isn't released during that time will be stored and released later as part of the aquifer storage and recovery program.

C. Reclamation and Reuse Projects

To facilitate conjunctive use of available water resources and enhance water conservation and recycling efforts, the Authority has implemented two water reuse and reclamation projects to supply non-potable water for large turf and industrial needs in the northeast heights and north valley areas. Another reuse and reclamation project is under design to reuse water effluent for industrial and irrigation needs in the southeast heights and south valley. The Authority is committed to additional reuse projects to provide non-potable water for irrigation and other uses on the westside and southwest mesa areas.

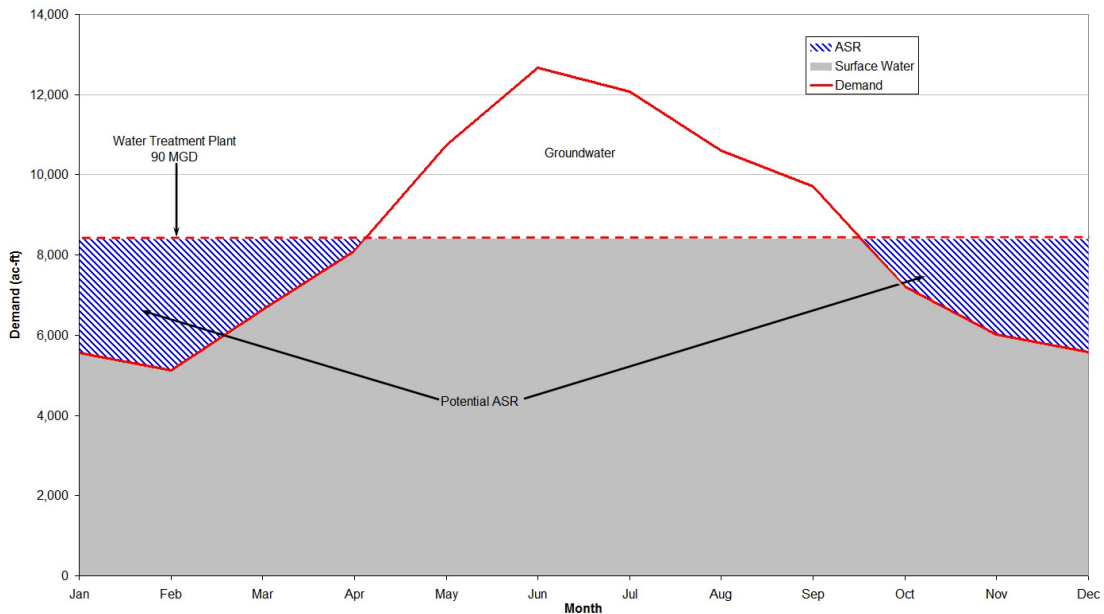
Water Resources Management Strategy

D. Aquifer Storage and Recovery

The Authority is currently implementing a small scale pilot aquifer storage and recovery project in the Bear Canyon Arroyo. The purpose of the project is to land apply San Juan-Chama water to the surface of an unlined arroyo to allow for infiltration of the water into the aquifer. This is the first step in demonstrating this technique for aquifer storage and recovery, but also allows the Authority to prepare for the necessary permits required for a large scale project. Large scale aquifer storage and recovery is a vital component of water resources management for the Authority as it provides artificial means of creating and maintaining the ground water drought reserve.

Annual Demand, Supply Sources, and ASR Potential

The figure below represents a typical year showing water use when the Drinking Water Project becomes operational. The Authority will transition from almost sole reliance on the aquifer to conjunctive use of surface, ground water and reuse. The graphic depicts how surface and ground water will be used and the available surface water for the aquifer storage and recovery program from October through April. The graphic not intended to specifically show how much surface or ground water will be used on a monthly basis because water use characteristics change from month to month and year to year.



Appendix A

2007

**Water Resources
Town Hall Report**



SHARED VISION

WATER RESOURCES TOWN HALL

Policies to Guide our Future

September 7, 2007

*Albuquerque Bernalillo County Water Utility Authority
and
Shared Vision*



Albuquerque Bernalillo County
Water Utility Authority

Thanks to the following for their involvement and support of the town hall

Water Utility Authority Board

Councilor Martin Heinrich, Chair
Commissioner Deanna Archuleta, Vice-Chair
Commissioner Alan B. Armijo
Councilor Issac Benton
Mayor Martin Chavez
Councilor Michael Cadigan
Commissioner Teresa Cordova
Trustee Pablo Rael, Ex Officio

Mark S. Sanchez, Executive Director

Customer Advisory Committee

Karen Alarid
Brian Burnett
Dale Dekker
Bob Grant
Stephanie Moore
Gabriel Nims
George Radnovich
Jennifer Thacher
Deborah Weidman

Town Hall Panelists

George Radnovich
Bruce Thomson
Leanne Towne
Joseph Quintana

Water Utility Authority

John Stomp, P.E., Water Resources Manager
Frank Roth, Senior Policy Manager

Shared Vision, Inc.

Signe Rich, AICP, Executive Director

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INTRODUCTION

Approximately 120 people attended the town hall held by the Albuquerque Bernalillo County Water Utility Authority and Shared Vision on September 7, 2007. The purpose of the town hall was to obtain community input on proposed policies that are being considered by the Water Authority to ensure a safe and sustainable supply of water into the future.

The group was balanced among many different facets of the greater Albuquerque metropolitan community. Participants included elected officials, government agencies, neighborhood associations, development groups, environmental organizations, businesses, educational institutions, consultants, engineering firms, and ordinary citizens. Organizations represented are shown in Attachment 1.

Reasons for attending were as varied as the participants.

They included:

- Find creative ideas, especially for water conservation
- Synchronize plans
- See how it all comes together
- It's an important issue
- Listen to interesting topics
- Be exposed to the state of knowledge in our region
- Listen to concerns
- Provide input regarding water = life
- Hear background
- Learn about conservation ideas and concerns
- Determine where I can help
- Discuss how to make the process work – economically/ politically
- Keep this a good place to live
- Find ways to deal with finite supply



Water Authority Board Chair, Martin Heinrich, addresses the Town Hall participants

An important challenge of the process was to educate and inform participants regarding the proposed policies, which cover a broad amount of technical material in today's complex and changing environment. Each participant had the opportunity read the Revised Policies on the Water Authority's web site prior to the town hall and received a packet of supplemental information.

Attendees heard presentations by John Stomp III, P.E., Manager, Water Resources, Engineering and Planning Division of the Water Authority, and by an expert panel consisting of Bruce Thomson, Ph.D., P.E. Regents Professor, UNM Department of Civil Engineering and Director of the UNM Water Resources Program; George Radnovich, ASLA, Principal, Sites Southwest and Chair of the Customer Advisory Committee; Leanne Towne, Division Manager, Bureau of Reclamation; and Joseph Quintana, AICP, Regional Planning Manager, Mid-Region Council of Governments. Moderated by Brian Burnett, the panel spent much of their allotted time addressing questions from the audience. A full list of questions submitted by participants during the panel session can be

found in Attachment 2. These will be addressed on the Water Authority's web site at www.abcwua.org.



John Stomp, Water Authority Water Resources Manager, and expert panel members address questions from the audience

Group Discussions

After the presentations, small groups of approximately fifteen participants each discussed the policies in six facilitated break-out sessions. Members of the Water Authority Customer Advisory Committee served as resources and each group was professionally facilitated. Discussion groups are the heart of the town hall process. Guided by a discussion outline, facilitators managed and recorded the group discussions. Digital recorders in each room provide back-up documentation. The smaller group setting provided opportunity to everyone to have their say, and many constructive ideas emerged from the group dialogue.

The Water Authority is interested in a sense of priorities among the policies to help guide resource allocations. Everyone individually filled out Scoring Sheets that ranked the policies in order of importance. Participants also voted by placing dots on the policies they considered to be most important and effective.

The purpose of this report is to summarize, synthesize, and accurately reflect the different points of view of the town hall so that ideas can be carried forward. The report is based on a large amount of diverse material, including the facilitators' notes of the break-out sessions and on tabulations of priorities.

Members of the Customer Advisory Committee will review the report and recommend policy revisions to the Water Authority Board.

II. BREAK-OUT GROUP DISCUSSIONS OF POLICIES

Those who attended the town hall voiced general support for the proposed policies. When asked to evaluate their importance, a majority in each group rated almost all of the policies “very important” or “somewhat important.” (See Section II).

1. WATER BUDGET

Question #1.

Policy A. proposes to use a Water Budget as a tool that would be updated annually to plan and manage our water resources and balance supply with demand. Looking at the chart in your packet, is the Water Budget an effective tool to communicate with the public regarding management of water resources? What could make it a more effective tool for communication with the public?

The questions on the proposed Water Budget sparked much discussion. Participants strongly supported the concept of having a Water Budget but wanted it to communicate to the public more clearly and be more understandable. Participants generated over 120 comments and suggestions for improvement. They encouraged the Water Authority to continue to work on making the Water Budget an effective tool for balancing supply with demand, and had many ideas for doing so.

Support for the Concept of a Water Budget:

Participants thought that the idea of having a budget makes sense and is a positive concept. It indicates that there is a finite amount of water and this is important. It is a term that people understand and are used to dealing with. The idea of a budget can be expanded to incorporate the idea of trying to preserve the principal (aquifer) and living off of what is accessible (SJCPC = monthly budget).

Many understood that this is intended to be a projection, not to apply to daily use. It is important for people to have good information on projected growth and demand and the relationship between different sources of water. The chart presents a valuable message that we need to start conserving now.

Over-all people thought that a colored graphic that puts information into one visual is a useful means of mass communication.

Limitations of the Water Budget as shown:

Many thought that the budget needs to present more information, specifically that it needs to tell us where we are right now and to show more specific sources, e.g. the drought reserve.

The format is another issue that people brought up. Many thought the chart is confusing and that the Water Authority needs to develop more understandable ways to convey the information. “It should be a good tool but isn’t.”

Who is the Water Budget for? It seems to be an engineering diagram rather than communicating to the individual water user. It “doesn’t relate to my household as ratepayer.” “It’s OK for engineers, awful for ratepayers.”

Some wanted the information put into a regional context. “It doesn’t have the big picture of the region.”

The demarcation showing transition from aquifer to use of the SJC project is not clear and the transition from red to purple on the diagram is confusing. “What is represented by the color change?” The aquifer drawdown needs clarification, showing what the aquifer looks like after the transition. It should show the number of acre feet used or drawn out of the river.

The term “budget” doesn’t seem to apply to this diagram. Use of a pie chart may be a better way of depicting a budget. Budgets should include specific uses (e.g. residential, agricultural).

Some thought that the diagram “conveys more certainty than is warranted.” “It’s what we hope will happen.” It is an “idealized tool” and needs to show alternatives if this scenario doesn’t play out.

What can make the Water Budget more effective?

Conceptually, the budget is a good tool, but it needs much development.

More information.

Participants asked for the following categories of information to be included:

- Where we are today
- Acre feet in the water portfolio by source; % for all the categories identified (e.g. conservation, surface water, etc.)
- Break down to show sources/ inflow and outflow; include return flow amount to river
- Note special events such as conversion to SJC to correspond with graph
- Categories of uses (e.g. landscaping, swamp coolers, leakage.) and their impacts.
- Distinguish consumptive uses.
- Clarify population growth assumptions.
- Show at what point demand is not supported by supply. Another person thought that it should clearly say we won’t run out of water. It is also an economic development tool.
- Eliminate “new sources” on the chart unless they are identified.

References, assumptions, sources. The budget needs to explain its assumptions, cite references and data. It needs to indicate the source and when it was done. These references would help to instill confidence in the numbers.

The number 150 gpcd needs explanation and clarification as to what feeds into this number. A progressive goal of attainment should not stop at one finite number.

Different scenarios

The chart doesn’t account for variables in demand due to population growth or different supply sources. Different scenarios should be developed to show a range of variables and their impact on

predictions, not just one line. How does the budget change with different policies, conditions, and “what-if’s” that are possible? New sources should be shown, with an explanation of how or why they could be more or less. One person thought that a “worst-case scenario” should be included.

Supplies may be affected by technical improvements and scientific advancements on re-use as a source of supply. Demand may be affected by population growth and by more or less conservation. The Water Budget should be made into a “contingency flow chart – if this, then that.”

[It should be noted that Policy A refers to development of an interactive water model. It will take more work to finish it, but the intent of the Water Authority is to place it on the web so that individuals can change assumptions or outcomes.]

Design for the public

Who is the audience for the Water Budget? It is important to have a common tool for education, benchmarking, involvement.

The chart appears to be most useful to engineering professionals. It needs to be personalized for end users (customers/ citizens), and should include a clear narrative to explain exactly what the graph is trying to communicate, for different learning styles. There could be different representations for different audiences.

Definitions

Definitions of terms such as “Water Budget”, “renewable”, “new sources” should be included to make it clear what the graph is depicting. Numbers should be consistent and match the definitions. Definitions should coincide with those of the State Engineer.

Regional relationships

The Budget should clarify that it reflects only what is within utility’s control (not regional).

However someplace there should be a description of how the Water Budget relates to the whole regional Middle Rio Grande water picture and the regional water budget, including what the Water Authority does not have jurisdiction over. This would include other users, such as pueblos, that tap into this equation.

The message

What message is the chart sending? It needs a mission or goal. It looks like we stop planning in 2040 (our lifetime). “We need to plan ahead like we did with SJC.” “Why should we conserve to fuel development?”

Format

Suggestion: Number the bullets so that the graph and text correspond, possibly through color-coding the text.

The chart is visually confusing. It could be broken down to many charts. Some suggested that pie charts or matrices might be clearer, one dealing with supply, the other with demand. Others saw greater value in having one diagram for communication with the public.

2. CONSERVATION

Question #2. Rate and discuss the importance of the following policies and other ideas you may have for reducing water demand through conservation.

The policies are listed in the priority order based on results of group voting. See Section II for more detail on the prioritizing process and results.

Priority (1) Continue public education on conservation needs and methods. Policies (D.) (I.4.)

Recommended changes: ~~Continue~~ *Significantly expand and improve* public education on conservation needs and methods

DISCUSSION:

This policy received more support than any other. Increased awareness is seen as the key and most important pivotal step to achieving conservation and affecting all other policy areas listed. It is necessary to keep emphasizing education because it takes a long time to be effective in developing community awareness and support.

Ideas for improving public education:

- Start in pre-school
- Use community media, e.g. Channel 12, 16, 27

Priority (2). Institute mandatory drought management measures to reduce demand during droughts. (D.4.)

What does “drought” mean? The policy can be misleading as stated because we are always in a state of “drought” due to living in a desert. There should be a distinction and definitions of relative levels of drought, e.g. short term, medium term, long term and different measures undertaken for each level.

It is important to be proactive before severe drought occurs. Generally, the groups supported more stringent and sooner drought management measures. “These measures should be enforced every year – all year.” Knowing the mandatory policies in advance would allow a user to plan accordingly, make changes in the good years, and become a more proactive user.

Priority (3) Use conservation penalties, credits and incentives in the water rate fee structure. (D.2.) (I.)

Recommended change: add “*or other means*” at the end

This policy meshes well with economic behavior. Current Xeriscape, WaterSmart rebates are examples of using credits and incentives for conservation. These incentives to convert existing landscapes should be increased.

There are ways for the Water Utility to gain revenues through conservation. PNM provides an example of using rates as a conservation incentive.

Penalties could include publishing the highest water users. The water bill could include information on aquifer levels as a means of education and motivation.

Priority (3) Adopt and enforce low water use landscaping standards for new construction. (L.5.)

Recommended changes: Adopt and enforce low water use landscaping standards for *all new and existing users construction* and *legislate for old and new construction.*

This is a good policy, with the proviso that plant and irrigation guidelines should be created so that low water use does not mean “just gravel.”

There should be incentives for retrofitting existing landscapes to xeriscapes. Best practices for “what we know now” should be incorporated into landscaping for new landscapes and modification of existing landscapes. Suggested techniques for encouraging low water use landscaping included the following:

- Sponsor more water audits for customers.
- Public education on “how to” do rainwater harvesting as an option for ornamental turf.
- Design to lessen water loss through evaporation.

Priority (3) Require water conservation in public spaces (e.g. parks and golf courses) (K.2) (K.3.)

This is positive because it’s important to model water conservation by government. The Parks Departments have been addressing this issue and are starting to make use of grey water for irrigation. Other ideas include: reducing green on golf courses, using natural systems for open space, and locating public spaces in infiltration zones and drainage catchment areas to recharge the aquifer.

Priority (4) Reduce commercial and industrial use to meet water conservation goals. (L.6.)

Participants did not fully understand what this policy involves and thought that the language should be clarified. One person thought that “Consumptive use” should be included in the definition.

Another suggestion is to require water audits for commercial and industrial users as well as residential users.

Other suggested Conservation Policies and Actions:

- More research on plants and water use
- Use science and technology as our tools to help New Mexico find solutions to water issues.
- Quantify gallons saved through various conservation measures
- Amend the Building Code to allow grey water use for residential development.

- Use of grey water should be mandated for landscaping.
- Add energy use to conservation measurements.
- Growth and economic development efforts should emphasize importing jobs, not people.
- Provide tools and incentives to reduce commercial and industrial use of water (e.g. cap and trade type system).
- Distinguish summer vegetable gardens versus grass landscape.



Facilitator Myra Segal guiding discussion at a break-out group

3. ***SUPPLY***

Question #3 Rate and discuss the importance of the following policies and other ideas you may have for extending and increasing our supply of water.

DISCUSSION

“An increase in supply is necessary for our children to plan for the future.”

“We need to change the paradigm of how we use water.”

Priority (1) Recycle and reuse as much water as possible. Use recycled and reclaimed water as nonpotable irrigation water for parks and golf courses.

Recommended changes: Add: *and anything else appropriate.*

Or eliminate the last sentence.

[Note: This policy seems to repeat the Policy on use of reclaimed water (B.3, F.1., F.2.) The definitions need to be clarified, and the policies combined or re-written].

The policy to recycle and re-use as much water as possible is strongly supported and people want to “make it easy to do this.” It makes sense to use non-treated, nonpotable water for irrigation.

However, this policy has two caveats:

- The cost of energy needs to be factored in to the cost of recycling water.
- Be mindful of unintended consequences. Return flow credit can be lost. Does use of recycled water for consumption take away from recharge to river/ aquifer? We may be robbing Peter to pay Paul.

Priority (2) Develop and implement a long-term Water Acquisition Plan through purchase of water rights and leases. (G) (L)

This is needed but it won't extend the water supply.

Does this policy conflict with regional cooperation? For some, water acquisition suggests economic, environmental and social inequities which can occur when water is transferred from one watershed to another. “Traditional and cultural uses must be protected.” Agricultural water should stay for agricultural uses (we will need land and water for local food).

Others say we should “start buying now.” Some support the idea of inter-basin transfers, importing processed water from other areas in the state (e.g. mining de-watering in Cibola County).

The issue of purchasing water rights was discussed by several groups. This issue also came up under the “no-net expense policy” discussed later. There is concern that requiring developers to bring water to the table is turning water rights into a commodity to be bought and sold. Some wanted the Water Authority to be responsible for obtaining water rights. One buyer = lower rates. One individual stated that “It is the utility's responsibility to provide water, not the developer or

consumer. Utilities should not be competing with each other for water rights, nor should they require the user to procure or provide rights to receive service.”

Priority (3) Use reclaimed wastewater, surface water, and shallow ground water for irrigation, industrial and other nonpotable uses (B.3.) (F.1.) (F.2.)

Recommended changes: Use reclaimed wastewater, ~~surface water~~, shallow ground water, *grey water and runoff* for irrigation, industrial and nonpotable uses.

[Note to CAC – “Please clarify what terms mean: reclaimed wastewater, surface water, shallow ground water, recycled water.” There is much confusion over these terms.]

Participants supported the idea of allocating different levels of water treatment based on use. Grey water should be used for flush toilets and landscaping. The same caveats apply as above, regarding energy use and return flow credits.

The term surface water should not be equated with wastewater. Some believe that river water is stretched to the maximum and should not be used for irrigation. Other sources of nonpotable water should be used.

Other Comments:

There seems to be a need for more PR to let people know what is being done by the Water Authority to reclaim wastewater and use nonpotable water for irrigation.

Technology can conquer difficulties with on-site wastewater treatment.

Irrigation should include landscaping but not large scale agricultural uses.

Priority (4) Use storm water for irrigation and aquifer recharge. (B.4.)

On-site water storage should be encouraged, especially for residential development. On-site water retention/ management are being done, but there should be better systems.

- Explore models – e.g. separate plumbing system for greywater
- Change impact fees to encourage on-site storage to replenish aquifer.
- Be ready for big storms
- Residential/ retention (cisterns)

Again, there are policy issues that must be considered regarding the use of run-off per requirements for the Water Authority and State of NM to send a certain amount of water downstream.

- Use water twice before giving it back to the river

Priority (5) Investigate potential for desalination (G.6.)

Many believe that this is not a sustainable option. Together with land use policies pertaining to infill and densities, this policy received the highest negative ratings.

- Energy intensive. Be careful to acknowledge that desalination requires power and power requires water.
- Toxic residue could contaminate fresh water
- This is still mining the aquifer
- Unintended consequences of brine in the ecosystem

Others believe that it is a good idea to start investigating this possibility because it can take a long time to implement it if it is a viable option. This policy would be appropriate for a 40-year plan.

Other suggested Supply Policies and Actions

- “The best supply is conservation.” Live with what we have rather than “more, more, more.” Live within our means.
- Best practices glossary
- Best technology glossary
- Explore for new water resources
- Define how much water could be leased instead of purchased
- Deal with evaporation issue; explore piping of wells. [1 gal in Albuquerque = ½ gallon in Elephant Butte]
- Reduce evaporation through underground storage
- Question agreements with other States
- Use new technology to eliminate clean water in wastewater cycle.



Facilitator Norm Gagne guiding discussion at a break-out group

4. WATER RATES

Question #4. Which measures would you support as factors in setting water rates?

DISCUSSION

Set water rates high enough to cover the total operating and capital costs of delivering a safe and sustainable supply of water. (I.)

Comments:

This policy seems essential to operate a utility.

To evaluate this policy, more information is needed about impact of setting rates to pay costs.

The total value of water should be added to water rates. This includes “opportunity costs” to the environment of diverting river water.

It would be helpful to the customer to have instant use meters that immediately register the amount of water being used.

The Authority should consider setting a base charge that is free. Other southwestern cities (Phoenix, Tucson, El Paso) take this approach.

Include cost of infrastructure and acquisition of water rights in water rates (I.)

Comments:

This policy needs to distinguish between costs of infrastructure and costs of acquisition.

The cost burden should be fairly distributed to present and future users. Making future generations pay for new communities outside the core does not seem equitable.

With respect to new infrastructure, options for payment should be kept open rather than mandating payment through rates. Costs of new infrastructure may be paid for through other sources (e.g. State or Federal funding), impact fees, or other creative ways. Revenue bonds paid through rates could be considered after other options.

Another point of view is that new users should pay infrastructure costs, that developers should pay for all new infrastructure. This cost would likely be passed on to the cost of a new house. “What’s wrong with increasing the cost of sprawl?”

With respect to maintenance of existing infrastructure, life cycle replacement costs should be shared through rates.

With respect to acquisition of water rights, the current policy of requiring developers to bring water rights to the table was questioned again. (See Supply policies). The main argument against

this policy is that it is commoditizing water rights and raising costs.

Some people who came to this town hall argued that one agency should be the buyer of water rights. “The Authority needs to be an active participant in developing sound, transparent water markets.” “Consider other utilities. It’s up to the water utility to provide water rights.”

Low rates for low water use customers, very high rates for large water users. (I.1.)

Comments:

The wording is provocative. What does “very high” mean?

It’s important to get high users to reduce, but as stated, this policy is confusing. Does this apply to all users in addition to residential? For residential users the policy does not account for different household sizes. Since schools are high users, should they pay higher rates which would be passed on to taxpayers? The threshold for higher rates should be defined by user class.

The policy should reflect “appropriate” use.

Impose a surcharge on residential customers if summer use is more than 2 times winter use. (This is not currently in the policies. Currently a surcharge is imposed if summer use exceeds 3x winter use.)

Comments regarding this policy were mostly negative.

- It penalizes people who are trying to conserve but have differences in family circumstances, e.g. summer visitors
- Inadvertent consequence – overuse of water in winter. There should be no penalty for low winter use. This policy can encourage waste (watering in winter).
- 3 times is effective enough

Alternatives to this policy should be considered.

- There should be no summer/ winter differential. Set a year-round household maximum – you use it as you wish.
- Fixed, no charge for basic service.
- Instead, use winter average to subtract from summer. Base surcharge on summer: winter ratio 24:4 seasonal use
- Vegetable garden lower rate

Include “lifeline” feature or credit for low income and low usage households (I.3., 5.)

This policy is generally supported as a social responsibility.

There should be a fixed “lifeline” rate; above that amount, a higher rate would apply.

Low flow toilet fixtures should be required for low income homes

Other Suggested Rate Policies and Actions

- Put a meaningful severance tax on ground water use
- Use rationing, not pricing
- Do away with rates based on size of meter. The current system based on meter size (old neighborhood versus new different) seems unfair.
- Give reclaimed water a 20% discount
- Raise rates to the actual value of water

5. LINKS TO LAND USE

Question #5. Which measures would you support to link land use planning with water management?

DISCUSSION

The first two land use policies had the highest negative ratings in the ranking exercise. They had the highest number of people rating them “not important” or “not at all important.”

Full build-out of available land in the existing service area. (.L. 2.)

Comments:

The definition of “full build-out” is vague. This term should be clarified.

- “Full build out” should be limited to mesas, not valley
- “Full build-out” should be limited to feasible build-out. There are obstacles to developing on many vacant sites.

A concern is that this policy drives up land costs in infill areas. However it can save on costs for infrastructure and water rights. Outlying unsustainable growth is a regional problem and its service costs should be transparent.

Increased building densities consistent with land use plans to reduce outdoor water use (L.4.)

Recommended change: Increased (add *existing*) building densities consistent with land use plans to reduce outdoor water use

Comments:

What does “density” mean? New Mexico isn’t the midwest or east coast. We need to define what is an appropriate, achievable density goal for New Mexico.

Many believe that this is where the market is headed, but many neighborhoods don’t want high density infill development. There needs to be a large cooperative effort between private and public sectors regarding infill and density issues.

There are concerns about the impact of this policy on affordable housing and a concern about creating “heat islands” by reducing open space.

Continue the current “no-net-expense” policy for new development that requires developments outside of the service area to provide water rights or funding for new water rights as a condition of service. (L.1) (L.7.)

There were two points of view on this issue.

Some gave good support for the policy that new development must have its own water rights.

- These rights should be for “wet water” - not just paper.
- The developer profits and creates a need to tax everyone else.
- The cost of service delivery is not balancing growth and water

A different view, primarily from the development community, is that this policy has negative consequences.

- A viable, growing community makes an economic contribution to the existing service area. This policy will push growth to other nearby areas. “Too expensive” is relative to economic growth. Eventually, supply-demand must balance
- The policy doesn’t control water use/ sustainability
- To simply imply “We’re too big, we can’t do any more” is missing an opportunity.

The argument against creating a marketplace for water rights was again raised.

- “It should be in the purpose of the Water Authority to supply water in the quantity, quality and location where it is needed, not dictate or control where water is to be used”
- This policy forces more development to be funded by large entities – small development community will be priced out.
- A consequence to be aware of is that price of water rights goes up due to this policy; people are bidding against each other.

Conservation oriented economic development that focuses on minimized water usage (L.6)

People generally supported the idea of recruiting low water users. There can be economic development and growth based on conservation.

Some believe strongly that economic development recruitments efforts should emphasize creating jobs, not importing more people.

Identify and protect areas of natural infiltration and recharge from development (C.2.) (J.1.)

Recommended change: add *“expand”*

The impact of this policy is questionable because there is not much infiltration in developed areas. However, most participants believe it is essential to identify and protect these areas on a basin-wide, regional basis. The best way to achieve this is to develop a full land use plan for the entire city to meet water supply limits and protect infiltration areas prior to development.

Other Suggested Land Use Policies and Actions

- Establish a sustainable water budget and use that to plan growth
- Update water master plan establishing levels of service. Link land use and water quality, transportation, air quality
- Tie water use to land use and minimize transfers of water rights; change State law
- Have the Water Authority do a review of developments before they’re approved

- Require review and authorizing of development proposals from the County and City by the Water Authority early in the approval process
- Include conservation standards for IRBs and other economic development standards

6. MOST IMPORTANT STEPS

Question #6.a. Out of all that was discussed today, what is the most important step the community can take to ensure a safe and sustainable supply of water?

This question asked people to write their ideas on post-it notes or flip-chart paper and create a list of ideas. Although they overlap, these lists generally fall into the categories of education, supply, conservation/ reclamation, regional approach, conservation, growth issues and process. Some are contradictory. They are grouped by subject for ease of reading.

Education

- An educated population and regional buy-in; PUBLIC EDUCATION; (mentioned several times.) ; Most important - Public education on importance and limits of water availability
- Most important – educate the public that water supply is exhaustible; public education and awareness of water
- Education to all residents especially youth in schools about the importance of water conservation and usage
- Encouragement of science fair project in schools that look at water conservation and measurement issues
- Make people feel they are part of the solution by educating and advertising – rather than feel something is being forced on them
- Continuing education efforts as to critical value of water. Incentives or penalties are only short-term solutions and may not affect behavioral changes.

Supply

- Develop and implement a long-term Water Acquisition Plan through purchase of water rights and leases.
- Obtain new sources and supplies, i.e. like San Juan Chama.
- Focus on new supplies of water
- No more San Juan- Chamas.

Regional approach

- Revise water budget regionally
- Regional perspective on conservation
- Work on a regional basis to agree (mostly) on which direction to go
- An integrated regional approach to water conservation (involving other water communities and municipalities in the region)
- Collaboration and consolidation of services

Conservation/ reclamation/ limits.

- Conservation, Outdoor conservation

- Contribute to water conservation within the household, community and industry
- Support reclaimed water and wastewater use in every possible/ practical aspect
- Conservation, coupled with minimalizing transfers of water from one watershed to another
- Agree to limit groundwater extraction in the Middle Rio Grande basin to the amount equal to the calculated (measured would be better) recharge from the previous year.
- LIVE WITHIN OUR MEANS!

Process

- Have real open discussions – not programmed sessions.
- Great facilitator. Thanks.
- Great process
- Look outside Albq. To El Paso/ Tucson/ Phoenix etc. for answers

Growth

- Water availability should limit growth when necessary
- New developments need to bring water rights and be done to conserve water
- Stop building where no water will be dependably available at reasonable cost
- Rather than just looking at costs/ service – look at what’s available – a finite approach (water rights have a finite terminus)
- Develop selective criteria to low water use industries
- Limit and control new development- housing for smart growth planning
- Land use planning linked to water availability
- Smart growth initiatives with water at the forefront of this policy and regional water adjudication as part of the equation

7. WHAT IS MISSING

Question # 6b Is there anything missing from the policies that should be addressed?

This question asked people to write their ideas on post-it notes or flip-chart paper and create a list of ideas. The biggest missing issue that people mentioned was the need for a regional approach. Responses are grouped for ease of reading.

Mission Statement

- A mission and vision statement is needed for the Strategy

Regional approach

- Tie-in with Regional planning
- Regional consideration – connect dots between physical world and political world
- Invent regional government
- Regional coordination should include Pueblos; Rio Rancho and Sandoval County and Valencia County
- Add watershed integrity in the equation
- We need to look at water resources as a regional issue. We are all connected through water.
- Good leadership in the policy organizations to established regional goals
- Missing? Integration of plans
- Vision of leadership of Middle Rio Grande
- Policies that should be addressed – increased planning, coordination between Water Authority, City and County
- Regional planning and land-use growth planning
- What's missing – a larger regional approach
- Regionalization of water and infrastructure planning and infrastructure development
- Regionalization in planning is needed

More analysis, education

- More cost/ benefit analysis of different water conservation methods
- The cost to future generations versus the cost of incremental increases now
- Showing the public the costs now versus what they would be paying if we had to go to something drastic (e.g. a desalination plant)
- We can advocate for less sprawl. We can better educate our children in water conservation, pollution prevention, etc. We can support research on water technology, e.g. desalination
- Continue conservation measures and education of general public “how to”

Water Budget

- Clear and understandable water budget
- Use wet water availability to drive demand – rather than guessing at demand and hoping to find water to meet it

Supply/ Maintenance

- Finite Supply
- Water rights acquisition should be coordinated with water acquisition for ESA needs
- Repair older water mains, lines to prevent water loss by spills – some are very large!
- Minimize water transfers beyond natural watershed areas.

More public process, education

- The Water Authority needs to conduct frequent (at least biannual) surveys or studies of what the citizens of the Middle Rio Grande basin (or WUA boundary) consider the priorities for water use and factor that into plan updates
- More and more open public dialogue. Questions should not be pre-selected
- The music and arts communities in our region represent a significant economic and human force. They should be encouraged to be involved in water education.

Big picture

- Change the paradigm of how we use water
- Think broader
- We need a cap on total water use, the only practical way to “turn off the tap”
- There is not enough emphasis on economic development in the policies.
- Common sense, reality, out of the box thinking.

Other

- Land use/ water nexus is like the ball that everyone is passing off, no one wants to hold
- Regulating of public and specifically, there should be a policy that addresses public land



Audience listens to facilitators report out on the break-out group discussions and priority rankings

II. SETTING PRIORITIES

1. INDIVIDUAL RANKING OF IMPORTANCE

Process:

Participants were asked to rank the policies on individual Scoring Sheets provided in their packets. This table is a SUMMARY OF the highest number of individual votes in each group allocated to a rank.

Highest Positive Scores

Combined Very Important and Somewhat Important

Continue public education	55
Low water use landscaping new construction	51
Conservation penalties, incentives	48
Mandatory drought management	48
Protect areas of natural infiltration and recharge	46
Conservation public spaces	46
Reclaimed wastewater for nonpotable uses	46
Recycle and reuse, parks and golf courses	46
Rates to cover total cost of water delivery	45
Include cost of infrastructure and acquisition in rates	44
Storm water for irrigation and aquifer recharge	41
“No net expense” policy for new development	38
Conservation-oriented economic development	38
Long-term water acquisition plan	28

Highest Negative Scores

Combined Not Important and Not at all Important

Full build-out available land, existing service area	12
Increased building densities	9
Investigate potential for desalination	9

RESULTS OF INDIVIDUAL RANKING OF IMPORTANCE

This table is a tabulation of the total number of individual votes in each group allocated to a rank.

- 5 **Very important**
- 4 **Somewhat Important**
- 3 **Neutral**
- 2 **Not important**
- 1 **Not at all important**

Individual scores

Policy	Rank	votes	votes	votes	votes		TOTAL votes
2.a. Water Conservation * Comment: add cost/benefits		VG I	VG II	GQ II	RG	Bern	
Mandatory drought management	5	8	9	8	2	6	33
	4	3	1	6	4	1	15
	3	2	1	2	0	0	5
	2	0	0	0	0	0	
	1	0	0	0	0	0	
Continue public education	5	11*	8	16	6	7	48
*Eliminate the word "Continue"	4	2	4	0	1	0	7
	3	1	0	0		0	1
	2	1	0	0		0	1
	1	0	0	0		0	0
Conservation penalties, incentives in water rate fee structure	5	8	4	9	2	1	29
*fee structure or other means	4	4	5	4	3	3	19
	3	1*	3	3	0	3	10
	2	1	0	0	0	0	1
	1	0	1	0	1	0	2
Conservation in public spaces	5	9	8	6	3	4	30
	4	4	4	5	1	2	16
	3	1	0	3	2	0	6
	2	0	0	0	0	1	1
	1	0	0	0	0	0	0

Policy	Rank	VG I	VGII	GQ II	RG	Bern	TOTAL votes
Low water use landscaping new construction	5	10	7	6	4	3	30
not big user. Adopt for existing older neighborhoods	4	5	3	8	1	4	21
	3	1	1	2	2	0	6
	2	1	0	0	0	0	1
	1	0	0	0	0	0	
Reduce commercial and industrial use to meet goals	5	8	2	3*	1	1	15
*Add "institutional" and "consumptive" use	4	3**	5	8	1	4***	21
**Requires economic balance	3	2	1	3	2	2	10
***not big user	2	2	0	1	1	0	4
***Important if done efficiently, equitably	1		1	0	1	0	2
3.a. Extend and increase supply							
Reclaimed wastewater, surface for irrigation, nonpotable uses	5	13	4	6	3	3	29
	4	2	3	6	2	4	17
	3	0	1	3	0	0	4
	2	0	0	0	0	0	0
	1	0	0	0	0	0	0
Recycle and reuse, e.g. parks and golf courses	5	12	5	8	5	3	33
	4	3	2	4	0	4	13
	3	0	1	4	0	0	5
	2	0	0	0	0	0	0
	1	0	0	0	0	0	0
Long-term Water Acquisition Plan	5	5	4	5	3	1	18
	4	1	2	6	0	1	10
	3	5	2	4	4	3	18
	2	1	0	0	0	1	2
	1	4	0	0	0	1	4
Potential for desalination	5	2	3	1	5	1	12
*Comment: Be cautious about impact on sweetwater above the brackish level and sustainability of brackish source	4	5**	3	2	0	2	12
** weigh transport costs incl energy costs	3	2	1	5	0	3	11
	2	1	1	6	0	0	8
	1	0	0	0	0	1	1
Storm water for irrigation and aquifer recharge	5	8*	5	5	1	4**	23
*Balance river needs, "precip only" landscape	4	6	1	7	1	3	18
**Substitute rain water for storm water	3	1	2	6	1	0	10
	2	1	0	0	1	0	2
	1	0	0	0	0	0	0

4.a. Factors in Water Rates	Rank	VG I	VG II	GQ II	RG	Bern	TOTAL votes
Rates to cover total operating and capital costs	5	10	7	13	5	5	40
	4	2	0	0	2	1	5
	3	0	0	0	1	1	2
	2	0	0	0	0	0	0
	1	0	0	1	0	0	1
Include cost of infrastructure and acquisition	5	8	2	11	5	4	30
*add "new" infrastructure	4	4**	4*	1	3	1***	14
**Impact fees?	3	0	1	1	0	1	3
***all pay	2	0	1	0	0	0	1
	1	0	0	1	0	0	1
Low rates for low users, high for large users	5	7	2	5	3	4	24
Comment:: need incentives	4	5	3	4	0	2	14
	3	1	3	6	4	0	14
	2	0	0	0	0	0	0
	1	0	0	0	2	0	2
Surcharge for summer use 2x winter use	5	2	1	2	1	0	6
	4	5	4	1	0	3	13
	3	4	2	8	4	1	19
	2	0	1	2	1	1	5
	1	0	0	0	0		0
"Lifeline" credit for low income, low usage	5	9	2*	6	3	4**	24
*Comment:: multi-residential rationing	4	1	1	3	0	2	7
Severance tax for low usage	3	4	5	4	2	1	16
**tiered water rates	2	0	0	0	0	0	0
	1	0	0	1	1	0	2

5.a. Link land use with water management	Rank	VGI	VGII	GQII	RG	Bern	TOTAL votes
Full build-out of available land - existing service area	5	6	1	0	1	2	10
*Comment:: will lose rate base to stand-alone utilities or pro-growth communities	4	0	5	0	2	1	8
	3	2	1	9	2	1	15
	2	1	1*	3	0	0	5
	1	3	0	1	2	1	7
Increased building densities	5	3	2	0	2	0	7
*Comment: neighbors don't want it	4	4	4	3	2	4	17
Appropriate use is important; conservation plan enforceable and paid for large uses	3	5*	1	7	1	1	15
	2	0	0	5	0	1	6
	1	1	0	0	2	0	3
“No-net expense” policy for new development	5	6	7	6	1	3	24
Comment: make developers bring them; get ABCWUA out of market	4	3	1	7	2	1	14
	3	2		2	1	0	5
	2	1		0	0	0	1
	1	1		0	0	1	2
Conservation oriented economic development	5	9	2	12	1	3	27
*Comment:: Green building	4	3	2	3	1	2	11
	3	0	4*	1	2	1	8
	2	1	0	0	0	0	1
	1	2	0	0	0	0	2
Protect areas of natural infiltration and recharge	5	10	6	12	8	1	37
Comment:: this is essential	4	2	2	2	2	1	9
	3	0	0	0	0	1	0
	2	0	0	0	0	1	0
	1	1	0	0	0	1	2

2. DOT VOTING

All groups conducted dot voting for Policy areas 2.a. and 3.a. in response to the question “*What are the highest priority issues where you would like to see immediate policy focus?*” This was a forced choice process where each participant was given three dots and asked to place them on one to three policies that each person thought was most important, i.e. they could choose three policies, or they could choose to place the three dots on one or two policies.

The following table is a SUMMARY of results of dot voting.

Water Conservation and Supply Policies in order of priority from Dot Voting

Continue Public Education	92
Recycle and reuse water, parks and golf courses	62
Long-term water acquisition plan	53
Reclaimed wastewater, surface for nonpotable uses	49
Mandatory drought management measures	49
Storm water for irrigation, aquifer recharge	45
Conservation penalties, incentives in rates	34
Low water use landscaping new construction	34
Potential for desalination	24
Water conservation in public spaces	19
Reduce commercial and industrial use to meet goals	19

The following table shows the tabulation of the total number of dots placed on each policy.

Number of Dots placed on each Policy

2.a. Water Conservation	VG I	VG II	GQ I	GQ II	RG	Bern	TOTAL
Mandatory drought management	8	9	7	7	13	5	49
Public education	12	13	16	18	19	14	92
Conservation penalties, incentives in water rates	10	6	1	12	2	3	34
Conservation in public spaces	1	5	4	4	1	4	19
Low water use landscaping new construction	2	6	7	3	11	5	34
Reduce commercial and industrial use to meet goals	9	none	3	3		4	19
3.a. Extend and increase supply							
Reclaimed wastewater, surface for irrigation, nonpotable uses	12	7	8	9	10	3	49
Recycle and reuse, parks and golf courses	7	10	11	13	13	8	62
Long-term Water Acquisition Plan	9	12	11	12	3	6	53
Potential for desalination	7	none	5	5	4	3	24
Storm water for irrigation and aquifer recharge	5	7	4	9	6	14	45

ATTACHMENT 1

List of organizations represented at the town hall

American Association of University Women
Amigos Bravos
Charter School
Bernalillo County
Bureau of Reclamation
Cherry Hills Civic Association
City of Albuquerque
City of Rio Rancho
City Planning Department
Elsueno Communities ISHA Foundation
Environment New Mexico
Fair Heights Neighborhood Association
Greater Albuquerque Chamber of Commerce
Gray Panthers
Hidden Valley Community Services Association
Highland Business and Neighborhood Association
Homebuilders' Association of Central New Mexico
Inez Neighborhood Association
Leadership Albuquerque
League of Women Voters
National Association of Industrial and Office Parks (NAIOP)
1000 Friends of New Mexico
Rio Grande Community Development Corporation
SAGE Council
Sandia National Labs
State of New Mexico Engineers Office
University of New Mexico School of Law/Utton Center
University of New Mexico Water Resources Program
US Bureau of Reclamation
US Representative Heather Wilson Office
US Senator Jeff Bingman Office
Ventura Estates Homeowners Association
Water Assembly
Water Utility Authority
Water Utility Authority Customer Advisory Committee
Xeriscape Council of New Mexico

ATTACHMENT 2

Town Hall Questions

Is there hard data on water use for different areas (i.e. older neighborhoods versus new subdivisions (Petroglyphs, Ventana, High Desert) and how do they compare to the goal of 150 gallons per person?

In the “No Net Expense” equation, why isn’t the tax/ revenue generating side included?

Example UEC + Water surcharge = 4k + 1.3 k = \$5,300 per home (much higher than commercial and industrial)

Plus taxation and revenue from growth - property tax increases, GRT, etc.

- 1) How much water would be saved if irrigation ditches were covered and lined?
- 2) In NY on Long Island, when there was a drought all homes were issued a simple valve to mount behind each shower head. We were then asked to take a “cowboy” type shower, where you wet yourself down, turn off the water, soap yourself down, turn on the water to rinse off.
- 3) How much agricultural water can be saved if flooding of fields was replaced with drip irrigation?
- 4) Is anyone looking at what conservation methods have been successful in other areas of the USA and the world?

Are we planning for the effect of global warming in our region? This is not mentioned in any of the policies.

Drought Management – Does the present plan take into account droughts in the San Juan water basin?

If conservation is so important, why does the “regional governments” continue to allow (in fact, encourage) the planting of grass and other heavy water using vegetation. (Case in point, expansion of Kasemen that just planted large amounts of sod.)

Water rates penalize people who have properties with meters above size. It does not encourage conserving. Why not restructure to charge residential customers for what water they use? This is especially important in older neighborhoods, where size 3 and 4 meters have already been squeezed down to 2’s.

Is anyone developing landscape LEED type certifications? What would they look like? Could they be part of the building permit process? Could it be regionalized?

--

Are there any plans to reuse water systematically on site – such as in homes using shower and/or bath water and/or clothes washer discharge to flush our toilets and help with irrigation? Comment: It is wasteful to not use water more than once at a site and a shame to use precious drinking water to flush toilets and water plants when it is not necessary.

Should the boundaries for water management be political boundaries or hydrologic boundaries?

--

What role does the utility have in population growth/ management?

a. If no control other than contiguous development and rate and fee structure, then how is the water budget injected into growth decisions?

If no control, is the utility charter to find and provide whatever/ wherever demands lead?

--

How predictable is the San Juan-Chama source?

What population growth numbers are used in your model?

Are water costs self-liquidating?

Does research indicate that higher water rates lead to greater conservation?

--

What incentives are being contemplated by the State to influence conservation and recycle/ reuse efforts by industrial and commercial users?

--

Since a significant percentage of residential water use is used for landscape irrigation, would the Authority consider mandating the use of xeriscaping similar to what the City of Tucson has implemented?

--

Is there any thought of expanding ABC WUA to include Rio Rancho, Los Lunas, Belen?

--

Who should pay for purchase of additional water rights for new customers and new houses?

--

Will new water sources and water rights needed for growth necessarily come at the expense of New Mexico agriculture?

--

Is local agriculture necessary to a sustainable future, given rising transportation costs for imported food?

--

Why is reuse/ recycling such a small percentage of the overall water budget moving forward?

--

Balance Demand with Renewable Supply, recommendation 2 – How/ why is the deep aquifer considered renewable?

1. How conservative is the assumption on the San Juan-Chama yield? It appears you expect to be able to get more in future years, which goes against the USGS projections.

2. How do you expect to achieve an increase in water conservation as population grows? Won't new users be placed on very stringent use requirements from day one?

1) Why isn't preserving economic development included in this document?

2) How will the Water Authority pay for future "water issues" without increased economic development within the city and county?

--

1) What impacts to surface flow are expected when we switch (divert) to surface water?

2) What about Rio Grande compact compliance and silvery minnow?

3) How will your planning efforts synchronize with adjacent regional water plans and the State water plan?

4) What are the "other" supply sources? Will they be available when we need them?

5) What is the proposed enforcement mechanism for the new 180 gallons per household measurement?

6) What is position of ABCWUA on requiring proof of water rights at development master planning process?

7) How does ABCWUA define "sustainability"?

--

A number of municipalities require developers to bring water rights to the table. This has created more demand for water rights, thus higher prices. What are your thoughts about paying a fee to ____ and have this one party buy the water rights?

--

Question for BOR:

In the environment of protracted drought, such as may come with global warming, will there be a long term shortfall in San Juan/ Chama water? Or does SJ/C get first shot at San Juan water?

--

Could we have an unannounced shut-off of water from an hour to several hours so people would realize just how precious water really is?

Ref. Section 1-C recommendation 2

What is being done to identify areas of recharge and protect them, especially given the rapid growth we are experiencing?

--

Why not create a partnership regional "Land Use Authority" through MRCOG? (Transportation and Land Use) This additional aspect of a COG has been done elsewhere in the US.

How might land use planners factor in watershed function and development impacts in land use policies? (not just water resource availability, but how development practices disrupt watershed function and overall watershed integrity).

--

The Water Resources Advisory Committee recommended a cap on total water use. Why isn't this recommendation being considered?

Dialogue and Information

How can we evaluate water conservation alternatives if we don't know the cost, the benefits, if it will achieve the goal, and what are the unintended consequences? (think of how the river has gotten used to San Juan Chama water!)

I hope that we will have a discussion about the full implications and consequences of conservation measures. Will we be acting so as to augment supply of the resource as an instrument of economic growth? Or is the focus to be on the sustainability of the resource?

--

In the Water Resources Advisory Committee's Interim Report, a one page document was included before the policies:

"Integrating those core principles into every action will go far in protecting our water future:

- 1) Balance growth with renewable supply
- 2) Assign some explicit value to water
- 3) Integrate the Authority's Water Budget into the Regional Water Budget and work with other entities to balance the consumption with renewable supply.
- 4) Assign some explicit value to traditional environmental and cultural uses.
- 5) Make ecological preservation of the Rio Grande an explicit goal in water management strategies. Rather than ask why it was not included in the draft WRMS, I'll ask that it be.
- 6) I would add a 6th mandate link between land use and water resources.

--

When will the WUA implement charging not for potential use (size of water/ sewer pipes) but actual USE – (equitable and encourages more conservation)

When will the WUA enact mandatory submetering (for multi-family apartments, condominiums) to determine charge per individual units (families)? For new development, renovations, existing apartments and condos?

How do we move away from using clean water as a conveyance for human waste?

--

The State Engineer relies on storm water flow into the Rio Grande to comply with delivery requirements to Texas under the compact. How can we harvest runoff and still comply with the delivery requirements to Texas?

Assuming that individuals use less water when their use is metered, as an owner of multi-family units, are there financial incentives for installation of individual meters?

--John Daugherty, MPA 459-3072

I understand these policies are different from those approved by the Water Resources Advisory Committee. What are the changes and why were they made?

How do you propose to control development in brackish water areas? Isn't it true that once it's desalinated and used it's gone (nonrenewable resource)? Any new construction cannot be sustained by this source.

Since so much of the water that passes by Albuquerque in the Rio Grande is committed to Texas (at Elephant Butte) and the + 50% of it evaporates on its way down the river, have we thought about taking water out of the river here in Albuquerque and pumping ground water from re-use back into the water (purchase water rights) much closer to the dam.

When you and the ABCWUA talk about “San Juan-Chama” water, are you also including the “native” Rio Grande water? That is, are you talking about just the approximately 47,000 ac ft of SJ-C water or the entire approximate 94,000 ac ft of combined water?

Is there certainty that San Juan-Chama will continue as a dependable supply source?

--

A) What considerations are or should be made for water planning when zoning, city planning and new economic development objectives are under debate?

B) How is the trade-off made between generation of earning potential and heavy water usage?

C) Are there ways to embrace heavy users that offer attractiveness of successful economic development (high wage jobs)?

1) The San Juan-Chama drinking water is dependent (as is the Rio Grande) on snowfall in the Colorado mountains. What happens if we don't have the snow pack to depend on?

2) How can the Water Authority continue to give permits for large scale development in light of the lack of water in our valley?

--

Now that we have the water treatment facilities (i.e. San Juan Chama) are there plans to start to move water from the ditches? John D'Antonio has said 75% of our water is tied to agriculture.

The schematic Water Budget is a graphic of the current Water Resource Management Strategies, or WRMS.

Information on what budget should include and how it might be used is contained in Resolution D4-12. Those should be included in Policy A.

As new policy strategies are adopted, the Water Budget will need to be updated to meet the goal of the new WMRMS. Which brings me to my first question: What is the goal? What are the policies supposed to achieve? “Balance use with renewable supply” is the mission of the regional water plan – itself a product of 100 + public meetings. How better than to show intent to work as a part of the basin?

Why is a change in the WRMS needed? Because additional information has been developed in the intervening 10 years. The regional water deficit – approximately 71,000 acre feet every year—is showing up with water table dropping 80 ft in places. Climate changes may affect both supply and management. And so on.

The schematic shows, after the dramatic drawdown, the groundwater depletions continue with a corresponding river leakage increase. How ill the new policies change that picture?

What is being done to prevent a Tucson type disaster (1992) – acidity control during treatment

--

Reference to Section I-G recommendation 2

What are the impediments to prohibiting additional water use on property as a condition of sale and what is being done to overcome them?

--

- 1) What land use policies would ABCWUA recommend the City and County adopt?
- 2) For ABCWUA issued availability statements
 - a) How is “Water Availability” determined?
 - b) How are such commitments tracked?
 - c) How much water remains available? As of today, how many more homes can be sustained?
- 3) What type/ degree of input does ABCWUA provide to County Planning Commission and to City EPC?
- 4) What is ABCWUA process for formulating conservation requirements
 - a) recent 180 gpl/ household availability letters
 - b) How are County/ City involved in formulating and implementing

We move other utilities (gas, oil, electricity) across state lines, why not water? Especially given the cost of water rights.

--

What discussion is underway to address state laws and regulations that limit our ability to reinject treated wastewater back into the groundwater reservoir? We need to evaluate our water resource as a closed system.

In an older neighborhood, like many in the NE Heights, repairing water lines and mains is important for water conservation. How come that isn't listed in future planning?

Also in older neighborhoods, trees and grass are important, not only as quality of life features, but as water conservers. Why penalize people for using water in summer on these when it enables us not to use air-conditioning or swamp coolers? Small conservation steps are important! Trees in small parks cool areas nearby, for example.

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Dependability of San Juan-Chama water?

Colorado River compact over-allocates the river in both Upper and Lower basins, and drought in the last several years has decreased the flow even more.

How much SJC water is allocated to Albuquerque? How much to which upstream and downstream users? Can we depend on upstream users to pass on our share?

Could inexpensive devices determine when and where landscape water is required?

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What actions are being taken to expand planning and regulating authority to the whole watershed including fast growing Sandoval and Valencia counties as well as Santa Fe portion of the Rio Grande watershed?

I was unable to be here between 11:20 and 1:30. But I want the Water Authority to address the legal issues that are never talked about, priority rights administration. The unadjudicated water rights reserved by the Wethers Doctrine and federal recognition Pueblo water rights. This be definition limits available surface water – until these amounts are quantified.

The other question I have was partially addressed by the BLM representative regarding long term drought and the fact that the San Juan Chama (Sept 2005) can get down to 12% of average. How many municipalities have 1907 pre-existing rights before Albuquerque's purchase and if the drought lasts 15 years does that mean aquifer drawdowns (given additional population/ economic growth) become precipitous.

--Elizabeth Chestnut, Secretary, Rio Grande Water Assembly

Congratulations for a superior performance in the Water Resources Town Hall, an extremely complex and important issue. The combining of multi-governmental agencies is critical to the future. A minor concern: This medium is limited to highly functioning educationally trained individuals. Many out of the mainstream would not relate to the conference. I liked the voting – opportunities to circulate-stretch.

The group summaries were very helpful. Standardization of terms – “dating” of materials – such as the Water Budget 2007 will be helpful as time passes. Will there be a 2008 Water Budget?

Strong leadership will be needed to carry this important work forward.

The morning panel had one woman – the afternoon panel had 4 women – interesting.

--John Daugherty, MPA

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Over the last several years there has been an apparent increase of moisture in the air. Rain and snow brought us out of drought classification. Global climate change is an unpredictable consequence. Many predictions say drought, yet we seem to have more moisture. This points to the need to prepare for both extremes; from flood to drought. Good design for these extremes could incorporate “watershed” terra farming in order to “harvest” the flood in preparation for the drought.